

LISTING OF CLAIMS:

Please cancel claims 4, without prejudice. Kindly amend claims 1, 2, 5-10 and 12 , as shown below.

This listing of claims will replace all prior versions and listings of claims in the Application:

Claim 1 (currently amended): An on-wafer monitoring system capable of measuring an operation of a plasma treatment apparatus on a wafer, said system comprising:

one or a plurality of sensor sections, a power source unit, and an I/O unit that inputs/outputs signals from/to outside, which are provided on a silicon substrate,

wherein said sensor sections have pattern portions, and a plurality of electrodes for separating ions and electrons of plasma by energy and include electrodes having the same potential as that of said silicon substrate directly under said pattern portions, and

wherein said power source unit takes out power from plasma potential or takes out power from photoelectromotive force of a PLZT device.

Claim 2 (currently amended): The on-wafer monitoring system according to Claim 1,

wherein a plurality of electrodes ~~electrode~~ of said sensor sections are Al electrodes, and space between each of the Al electrodes is insulated by γ -Al₂O₃.

Claim 3 (original): The on-wafer monitoring system according to Claim 2,

wherein the side surface of said Al electrodes is covered with a thin oxide film.

Claim 4 (canceled)

Claim 5 (currently amended): The on-wafer monitoring system according to Claim 3 ~~any one of Claims 1 to 4,~~

wherein said I/O unit inputs/outputs signals from/to outside by light.

Claim 6 (currently amended): The on-wafer monitoring system according to Claim 1 ~~any one of Claims 1 to 5,~~

wherein said system includes an ion energy analyzer, which has a collector electrode at a sensor section bottom and measures ion current in the collector electrode to obtain ion energy distribution, as said sensor.

Claim 7 (currently amended): The on-wafer monitoring system according to Claim 1 ~~any one of Claims 1 to 6,~~

wherein said system includes a photon detector, which detects light made incident into a pattern by photoinduced current generated in an insulating film, as said sensor.

Claim 8 (currently amended): The on-wafer monitoring system according to Claim 1 ~~any one of Claims 1 to 7,~~

wherein said photon detector forms a metal thin film on said insulating film, and detects light having energy equivalent to or more than an energy difference between the work function of the metal and the conduction band bottom of said insulating film out of light transmitted from the metal thin film.

Claim 9 (currently amended): The on-wafer monitoring system according to Claim 1 ~~any one of Claims 1 to 6,~~

wherein said system includes a photon detector that detects light by a photo diode, as said sensor.

Claim 10 (currently amended): The on-wafer monitoring system according to Claim 1 ~~any one of Claims 1 to 9,~~

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

wherein said system includes an ion radical analyzer, which identifies radicals and ions by detecting light emission by the collision between electrons from an electron gun and radicals or ions, as said sensor.

Claim 11 (original): The on-wafer monitoring system according to Claim 10,

wherein said ion radical analyzer has a spectroscope for detecting light emission.

Claim 12 (currently amended): The on-wafer monitoring system according to Claim 1 ~~any one of Claims 1 to 11~~,

wherein said system includes a probe, which detects at least one of electron current, electron energy distribution, ion current, electron temperature, electron density, and charge storage amount, as said sensor.

HAYES SOLOWAY P.C.
130 W. CUSHING STREET
TUCSON, AZ 85701
TEL. 520.882.7623
FAX. 520.882.7643

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567